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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,313	09/16/2005	Hitoshi Iochi	L9289..05177	8218

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EXAMINER

MITCHELL, NATHAN A

ART UNIT	PAPER NUMBER
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2609

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,313

Applicant(s)

IOCHI ET AL.

Examiner

Nathan Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5 and 7-16 is/are rejected.
- 7) ☐ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the phrase "is provided" is improper language. Correction is required. See MPEP § 608.01(b).

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 02/13/2004. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Claim Objections

3. Claim 9 is objected to because of the following informalities: at line 9 "form" should be changed to --from--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 and 7-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/065664 A2 to Tiedemann et al. in view of U.S. Patent No. 7,120,447 B2 to Chheda et al.

For claim 1, Tiedemann et al. teach a scheduling apparatus comprising
a distribution section (contained within fig. 2 270) that distributes a reception power resource (fig. 4 414-418 and see fig. 8 to see this is done with data rate control through the BSC) to a plurality of transmission schemes (fig. 3A depicts a variety of transmission schemes used) used in uplink data transmission; and

a scheduling section (contained within fig. 2 270 see paragraph 1106 line 4 it can be within the base station) that executes uplink data transmission scheduling in accordance with reception power resources (paragraph 1054 bullet 2 describes scheduling in accordance with power resources) distributed to the plurality of transmission schemes.

For **claim 1**, Tiedemann et al. discloses all the subject material of the claimed invention, but does not explicitly disclose the reception power resource being set by a superordinate apparatus. It is believed that this feature is likely inherent given that it makes the most sense for the base station controller to set it given its global view of the system.

In a similar system, Chheda et al. teach a superordinate apparatus (BSC) instructing a base station (through the use of a rise over thermal level) to alter its power reception resource levels (column 10 lines 43-44). It would have been obvious to one of ordinary skill at the time of invention to use the BSC to perform this function. This could easily be accomplished by one skilled in the art by having the BSC set a threshold in the base station and having the scheduler operate based on the threshold. The motivation for doing this is improved load balancing.

For **claim 7**, one skilled in the art could interpret "a dedicated scheduling section" as a scheduling section that is not shared (i.e. it is at the base station and not the base station controller). Thus the scheduling section described in paragraphs 1054 and 1106 of Tiedemann et al. reads on the claim as it is dedicated to performing scheduling for the base station and executes scheduling for one type of transmission scheme (and others as well) (paragraph 1004 lines 6-9). Furthermore, Tiedemann et al. disclose surplus reception power resource being reacquired (paragraph 1011 lines 26-27). These functions would be performed by the base station and thus an acquisition section is inherent in fig. 2 270. Tiedemann et al. further disclose these resources being assigned to another transmission scheme (fig. 3A) as needed (paragraph 1011 lines 25-26).

For **claim 8**, Tiedemann et al. further disclose allocating reception power resources (page 14 lines 26-27) based on information indicating an amount of data in the mobile station apparatus or variation of the amount of data (page 14 lines 23-24).

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For **claim 9**, Tiedemann et al. further disclose a selection section (inherently this would be in fig. 2 270 in association with the BSC) that selects, based on reported information (fig. 4 412) reported from a mobile station (such as 106a-f) apparatus, at least one transmission scheme (fig. 3A) to be used by the mobile station apparatus (416, 418);

Wherein the distribution section (inherent in fig. 2 270) performs reception power resource distribution in accordance with a selection result of the selection section (420).

For **claim 10**, the manner in which Tiedemann et al. implements its communication system encompasses the claimed invention. Tiedemann et al. disclose assigning and de-assigning supplemental channels (that is to say switching schemes as necessary) (paragraph 1059 lines 6-7).

For **claim 11**, the manner in which Tiedemann et al. implements its communication system encompasses the claimed invention. Tiedemann et al. disclose based on reported information (412) whether or not the transmission scheme should be changed (paragraph 1060 lines 9-10). The scheduling section can be considered to be making the decision although its actions are based on the BSC.

For **claim 12**, Tiedemann et al. disclose a base station comprising the scheduling apparatus according to claim 1 (fig. 2 104).

For **claim 13**, Tiedemann et al. disclose a radio communication system comprising the scheduling apparatus according to claim 1 (fig. 2 104 and 106).

For **claim 14**, every element of the claimed invention has been previously addressed with the exception of the signaling section. Tiedemann et al. further disclose a signaling section (250,

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252, 268, 266, 264) that signals a decision result (418) of the decision section to the mobile station apparatus (fig. 1 106a-f).

For **claim 15**, Tiedemann et al. disclose a mobile station apparatus that performs uplink data transmission to a base station apparatus, the mobile station apparatus comprising:

A reporting section (fig. 2 230, 214, 216, 218, 220) that reports information relating to the mobile station (412) apparatus to the base station apparatus;

A detection section (fig. 2 220, 218, 222, 224, 226, 230) that detects signaling from the base station apparatus of a transmission decision result based on reported information (418); and

A transmitting section (fig. 2 210, 212, 214, 216, 218, 220, 230) that performs uplink data transmission (420 indicates start) using a detected transmission scheme.

Claim 16 is rejected for the same reason as claim 1 as it is the corresponding method claim to the apparatus claim.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann et al. in view of U.S. Patent No. 7,142,548 B2 to Fong et al.

For **claim 2**, Tiedemann et al. disclose predetermining a bandwidth for a mobile station (416), but do not disclose setting another reception power resource for another transmission scheme to a value obtained by subtracting the predetermined value from the reception power resource set by the superordinate apparatus.

In a related field of endeavor, Fong et al. teach a certain amount of resources (bandwidth) being assigned to mobile stations operating with a certain transmission scheme (autonomous) while the remaining resources are assigned to mobile stations operating with a second transmission scheme (scheduled). It would have been obvious to one of ordinary skill at the time

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of invention to combine the teachings of Fong et al. with those of Tiedemann et al. by designating one transmission scheme to operate with a predetermined amount of resources. The motivation for making the changes is to address a well-known issue in communication systems (important types of traffic (e.g. voice) need a guaranteed quality of service) with the well-known solution (fixed resources).

9. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann et al. in view of Fong et al. as applied to claim 2 above, and further in view of U.S. Patent No. 7,079,550 B2 to Padovani et al.

For **claims 3-5**, Tiedemann et al. as modified by Fong et al. discloses all the subject matter of the claimed invention with the exception of the amount of resources assigned being limited to a maximum value as recited in claim 3, a minimum value as recited in claim 4 and an intermediate value as recited in claim 5.

In a similar system, Padovani et al. disclose the use of minimum (column 20 lines 44), maximum (column 20 line 45) and intermediate (column 20 line 60) amounts of resources. It would have been obvious to one of ordinary skill at the time of invention to combine these teachings with the apparatus of claim 2. The motivation for doing this would be to optimize the system as needed based on the factors such as the processing requirements, the signal/noise environment and other system factors.

Allowable Subject Matter

10. **Claim 6** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For claim 6, the prior art teaches resources being assigned based past

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resource distributions, but does not teach resources being assigned based on past scheduling outcomes (although frequently scheduling is done based on the distribution of resources).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US-2004/0160959 A1	08-2004	Balachandran et al.	370/395.4
US-2005/0025100 A1	02-2005	Lee et al.	370/335
US-2005/0075124 A1	04-2005	Willenegger et al.	455/522
US-7,046,648 B2	05-2006	Zhang et al.	370/331
US-7,133,690 B2	11-2006	Ranta-Aho et al.	455/522
US-7,227,854 B2	06-2007	Kim et al.	370/342

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Mitchell whose telephone number is (571)270-3117. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571)272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Mitchell

Nathan Mitchell/nam

Tom

DANG T. TON
SUPERVISORY PATENT EXAMINER